IN THE SPECIFICATION:

Page 1, please amend the paragraph 0001 starting at line 5 and ending at line 10 as follows:

–[0001] The present invention pertains to a mining member designed as a cutting roller for a continuously operating surface miner ~~according to the preamble of the principal claim~~. Such a cutting roller is especially suitable for use for mining high-strength mineral raw materials such as hard coal, ores, etc., with compressive strengths between 50 and 140 MPa by means of surface miners. However, it may also be used in rotary cutters for road construction and breakers.--

Page 1, please amend the paragraph 0002 starting at line 8 and ending on page 3 at line 15 as follows:

--[0002] When a surface miner is used as surface mining equipment with a roller-shaped mining member (a frontal mining portion that is attached via a support to a caterpillar) rotatable around its horizontal axis, the mining operation is carried out, in general, according to the so-called cutting operation. According to its basic concept, the mining member of such a device, as is known from, e.g., the patent DE 199 41 801 C2, has a roller width that is greater by a factor of 5 to 8 (as a result of which it can also be defined as a cutting roller as opposed to cutting drill) than that of the cutter loader known from underground mining. The mining member is equipped with bits, and the type of the bits, their number and their arrangement in relation to one another are provided according to the so-called cutting operation. The cutting

geometry of each bit is optimized for particular conditions of use. During the separation, each bit creates at the same time a flank for the bit that is displaced in the circumference and follows it in time. The separated material is delivered in the area of the mining member through the screw turns from the outside to the inside to the middle of the turn and subsequently transferred to a removing conveyor. When developing a raw material deposit with a surface miner, the mineral raw materials are mined in blocks. The volume of such a block being mined consists of the mining surface of the mining member, which surface is rectangular in the direction of mining, multiplied by the length of mining. The mining technology for such a device is known from the technical article "Konstruktive und verfahrenstechnische Voraussetzungen und Erfahrungen bei der Entwicklung eines Surface Miners für den Einsatz in russischen Tagebauen" [Design and technological requirements and experience with the development of a surface miner for use in surface mining in Russia] published in the journal *Braunkohle, Surface Mining*, Vol. 49 (1997), No. 2, pp. 123 to 128. This includes mining only so many blocks next to one another such that the width of the deposit is reached. The subjacent layer is then mined in turn in blocks located next to each other. The mining member cuts itself free with one or more sides from the rock being mined (formation) during the mining operation with a continuously operating surface miner. This free-cutting is associated with a considerably higher energy consumption and wear and calls for special equipment for the mining member with tools in the edge area compared with the rest of the larger middle area. The technical effort needed for the free-cutting of the mining member at its outer edges increases with increasing hardness of the deposit of mineral raw materials. The separated

material is partially thrown out on the side by the edge bits at the outer sides of the mining member in the prior-art mining devices. As a result, accumulations are formed over the entire length of the block being mined. These lead to a reduction in the mining output and require the use of an additional clearing technique. To reduce the accumulations, the surface miner is not operated with the full roller width on the side of the surface already mined off. As a result, additional losses of output must be accepted. Other drawbacks of such a roller-shaped mining member equipped with round-shaft bits are that high energy losses and intense wear occur on the bits due to the sliding contact of the bits in the case of abrasive earth materials. The specific energy consumption also increases enormously if the compressive strength of the deposits of mineral raw materials is higher than 60 MPa and makes the use of surface miners uneconomical. Another drawback is that pulverized rocks generate increased dust emission during the mining operation. Strong tear-out forces, which lead to the formation of large chunks, are generated on the bits in case of the overshot mining method. This is a considerable obstacle for the entire mechanical mining operation and may lead to a reduction of output, or an additional intermediate breaker becomes necessary.--

Page 16, please amend the paragraph 0027 starting at line 14 and ending on page 17, at line 13 as follows:

--[0027] The width of the two outer frusta of the cutting roller equals at least 1/4 of the mining height H_{Schn}. The bit density in the edge areas L_{RB} is at least twice that in the area of the middle mining front L_M, the working face. To destroy solid earth materials in the

repeatedly blocked separation operation, the path distances t_B of the mini-disk bits 7 in the area of the middle mining front L_M are selected according to the following formula:

$$t_B = p_\Sigma \cdot \eta_m$$

Here, p_Σ is the sum of the penetration of the mini-disk bits in the rolling path at the beginning of the breaking operation. The average is $p_D = 15\text{-}20$ mm

η_m is the mean splitting modulus at the beginning of the breaking operation. $\eta_m = 3\text{-}4$ can be assumed for solid and tough earth materials and $\eta_m = 3.5\text{-}5$ for solid and brittle earth materials.

The three-dimensional arrangement of the mini-disk bits 8, 9 in the edge areas L_{RB} and their path distances are set according to the so-called free-cut. $t_{BR} = (1\text{-}2)p_\Sigma$, and the edge mini-disk bit 8 at the conveying screws 10, 11, 12, 13 and mini-disk bits 9 at the additional conveying screws 18, 19, 20, 21 are arranged in the same rolling paths and are directed with the driving wedge flanks toward the outside (Figure 2 and Figure 4). The number of disk bits arranged in each rolling path of the edge area L_{RB} is doubled and these disk bits are arranged on the width of the edge area L_{RB} higher by one depth of cut of the edge bits than in the wall area.--

Page 18, please amend the paragraph 0029 starting at line 10 and ending on page

19, at line 3 as follows:

--[0029] Provisions are made in a second embodiment variant for the cutting roller to be equipped with mini-disk bit blocks 23. Each disk bit block 23 comprises according to Figure 5 two mini-disk bits 25, 26 each, which are arranged in pairs and symmetrically to one another on the bit holder 24. The axial forces of the two mini-disk bits 25, 26 of one pair offset each other directly in the bit holder 24 and thus guarantee the smoother run of the entire mining member. It is important that the driving wedge flanks are arranged at the bit holder 24 in such a way that they act against each other. The distance between the two mini-disk bits 25, 26 of one disk bit block 23 is also the distance between the cutting paths shown in Figure 2, which is to be coordinated anew each time with the particular earth material to be mined. The path distances shall also be maintained in connection with the arrangement of the disk bit blocks 23 on the conveying screws 10, 11, 12, 13 and the additional conveying screws 18, 19, 20, 21. The pressing force (normal force) is lower by about 20% and the tangential force (rolling force) by about 28% in the case of the disk bits 25, 26 arranged in pairs compared with the individual mounting of mini-disk bits 7, 8, 9. The optimal path distances of the mini-disk bits 25, 26 belonging to one pair can be maintained by selecting different lengths for their common axis [[27]] without complicated conversions.--